

**GREEN LEVEL**

**Cut and Leave Grass on the Lawn** – A 5,000 square foot lawn generates a ton of grass clippings annually. Those clippings need to be trucked to composting facilities. (The Chatham Borough mulch area does not have capacity for all the grass clippings generated in town, so they truck them to a local commercial facility, which then trucks them to a composting facility in Pennsylvania). Leaving grass clippings on the lawn saves a lot of carbon emissions. Grass left on the lawn acts as a natural fertilizer, returning about 2 lbs. of nitrogen per 1,000 square feet. Leaving grass on the lawn reduces the need for fertilizer and herbicides, keeping them out of local storm sewers, streams and rivers. Herbicides and pesticides kill weeds and pests but have also been associated in scientific studies with various health problems, including asthma, cancer, developmental and learning disabilities, nerve and immune system damage, birth defects, reproductive impairment, liver and kidney damage, and Parkinson's disease. Herbicides and pesticides that run off local lawns run eventually into the Passaic River, which is the source of drinking water for many towns in New Jersey, including Chatham Township. Grass clippings left on the lawn block weeds and retain moisture, decreasing the need for water. Leaving grass clippings on the lawn saves money for the resident and helps the environment. See NJ DEP Cut It and Leave It! brochure on this webpage and at: [www.state.nj.us/dep/dshw/recycling/brochures/recycling%20brochures/grass.pdf](http://www.state.nj.us/dep/dshw/recycling/brochures/recycling%20brochures/grass.pdf).

**Compost Leaves**

Saves money, creates compost you can use on your garden. Compost retains moisture, decreases need for water. Eliminates greenhouse gas emissions generated by transporting leaves.

**Recycle Ink Cartridges** – Ink cartridges are made from plastic, which takes from 450 to 1,000 years to decompose. Americans use 700 million ink and toner cartridges per year, an estimated 375 million of which end up in landfills. Ink can leach out of the cartridges and harm the environment. Most parts in an ink cartridge can be reused or recycled. They can be recycled at Staples, Office Depot, and other locations, including the Morris County Household Hazardous Waste Facility, 973-631-5109, [www.MCMUA.com](http://www.MCMUA.com), at the Chatham Borough Recycling Depot, Summit Ave. and Ogden Street, on Electronics Recycling days, 9 am to Noon, 2012 dates: January 7, 14, 21 and June 2, 9, and 16.

**Recycle Electronics Appropriately** - Electronics equipment has toxic chemicals, such as lead, mercury, cadmium and bromated flame retardant that can leach into soil, water and air when incinerated or disposed of in landfills. It is estimated that 400 million electronic devices are scrapped each year.

The NJ Electronic Waste Management Act bans the following items from the trash stream: computers, laptops, monitors and TVs. Violators are subject to fines of \$500 to \$1,000 per offense. See [www.state.nj.us/dep/dshw/ewaste/index.html](http://www.state.nj.us/dep/dshw/ewaste/index.html) and [www.njleg.state.nj.us/2008/Bills/PL08/130\\_HTM](http://www.njleg.state.nj.us/2008/Bills/PL08/130_HTM).

In addition, recycle the following electronic equipment items: DVD players, fax machines, keyboards, mice, mainframes, printers, scanners, speakers, stereos, VCRs, wire, telecommunications equipment, hard drives, removable floppy and hard drives, phones, cell phones, copiers, toner and ink cartridges.

Electronics equipment can be recycled at the Morris County Household Hazardous Waste Facility, 973-631-5109, [www.MCMUA.com](http://www.MCMUA.com), and at the Chatham Borough Recycling Depot, Summit Ave. and Ogden Street, from 9 am to Noon, on the following dates in 2012: January 7, 14, 21 and June 2, 9, and 16. Best Buy, Apple, Staples and Goodwill/Reconnect also have electronics recycling programs. See [www.MCMUA.com](http://www.MCMUA.com).

**Use Reusable Shopping Bags** – Americans use 380 billion (380,000,000,000) plastic bags per year. Most end up in landfills. Plastic bags are made from petroleum and natural gas, nonrenewable fossil fuels. They take up to 1,000 years to decompose and kill an estimated 100,000 marine animals per year, including whales, seals and turtles. Many people find that cloth bags hold more and are more comfortable to carry than plastic bags. People can keep cloth bags in their cars and use cloth bags for all shopping, not just grocery shopping.

**Adjust Thermostat to Save Energy: 2 degrees lower in winter, 2 degrees higher in summer** - Reducing the temperature by 2 degrees in the winter can save more than 50 gallons of fuel, which equates to \$125 to \$150 in savings and prevents 900 lbs. of carbon emissions annually. Raising the temperature two degrees in the summer can save \$50 and prevent 460 lbs. of Co2 emissions. See [www.sustainablejersey.com](http://www.sustainablejersey.com) and [www.apps1.eere.energy.gov/consumer/your\\_home/space\\_heating\\_cooling/index.cfm/mytopic=12720](http://www.apps1.eere.energy.gov/consumer/your_home/space_heating_cooling/index.cfm/mytopic=12720).

**Turn off Water When Brushing Teeth** – this simple step saves \$75 and 11,860 gallons of water per year for a family of 4. See NJ WaterSavers: [www.njwatersavers.rutgers.edu](http://www.njwatersavers.rutgers.edu).

**Turn Off lights and Computers when Not In Use** – this simple step makes a big difference. According to the Hinkle Foundation, [www.thehcf.org](http://www.thehcf.org), the average US consumer generates 12.4 tons of Co2 emissions per year, with 24% generated from lighting. If 1,000 people decreased their lighting needs by 10% by turning off lights and computers when not in use, they would prevent  $12.4 * .24 * .01 * 1,000 = 298$  tons of Co2 emissions per year.

**Shop Locally to Save Fuel** – Try to prepare at least two meals per week with food from local sources. The popular Chatham Borough Farmers' Market provides a wide variety of local and organic food from June through November. Most food travels an average 1,600 miles before reaching the grocery store, generating a lot of carbon emissions. Local food tastes fresher and requires fewer resources to transport, package and store. Buying local supports the local farmers, preserves open space, and helps build community. See [www.sustainablejersey.com](http://www.sustainablejersey.com), [www.localharvest.org](http://www.localharvest.org), [www.sustainabletable.org/issues/buylocal/](http://www.sustainabletable.org/issues/buylocal/).

**Run Dishwasher and Clothes Washer Only When Full** – Running the dishwasher only when full saves \$19 and 2,920 gallons of water per year for a family of 4. Running the clothes washer only when full saves \$68 and 10,534 gallons of water per year for a family of 4. See [www.njwatersavers.rutgers.edu](http://www.njwatersavers.rutgers.edu).

**Line Dry Clothing (indoors)** – Chatham Borough has an ordinance against outdoor clotheslines. Run a clothesline indoors and line dry clothes to save money and reduce energy consumption and greenhouse gas emissions.

Along with refrigerators, lighting and heating, clothes dryers are among the largest energy consumers in the house. If 1,000 people line-dry one load of laundry per week instead of using the clothes dryer, together they can prevent between 2200 and 5500 lbs. of Co2 emissions, depending on the wattage of their dryers. See [www.sustainablejersey.com](http://www.sustainablejersey.com) and [www.apps1.eere.energy.gov/consumer/your\\_home/appliances/index.cfm/mytopci=10040](http://www.apps1.eere.energy.gov/consumer/your_home/appliances/index.cfm/mytopci=10040),

**Stop Car Idling: Turn off Engine when Parked Anywhere for Over 30 Seconds** – idling for more than 3 minutes, except in traffic, is illegal in NJ under NJAC 7:27-14 and NJAC 7:27-15.

It makes sense to stop car idling. Just 10 seconds of idling uses more fuel than restarting your car. It takes only 30 seconds to warm up your car engine. When you idle your engine, fuel combustion is not complete and fuel residues condense on cylinder walls, where they can contaminate oil and damage engine components.

An idling vehicle produces twice as many exhaust emissions as an engine in a moving vehicle. Two minutes of idling uses the same amount of gas, and emits the same greenhouse gases and pollutants, as driving approximately one mile. Children and older people are especially vulnerable. Exposure to air pollutants is actually higher inside an idling vehicle than at the roadside.

In New Jersey, approximately 359,000 tons of Co2 per year are emitted from light duty vehicles. If one thousand people stopped idling, 41 tons of Co2 emissions would be prevented. See [www.sustainablejersey.com](http://www.sustainablejersey.com) and [www.chathamtownship.org/ctec](http://www.chathamtownship.org/ctec).

## **GREENER LEVEL**

**Walk or Bike Instead of Driving At Least Twice Per Week/Carpool or Take Mass Transit to Work** -Walking, biking, carpooling, or taking mass transit at least twice per week reduces greenhouse gas emissions and pollutants, while saving money on fuel and vehicle maintenance. Approximately half of all vehicle trips are less than two miles long and could be made on bicycle or foot. If 5% of people in an average municipality walk or bike at least twice per week, they would prevent emissions of an estimated 18,000 lbs. of Co2. Health benefits of walking and biking include drops in cholesterol level and blood pressure, as well as improved mood. Walking and biking contribute to a sense of community by providing more opportunities for interacting with people and the environment.

**Plant A Tree Per Year** – Trees save money and look beautiful. They decrease global warming, because they breathe in carbon dioxide and breathe out oxygen. They reduce air conditioning usage and cost, absorb noise, and decrease erosion. They can be recycled at Staples, Office Depot, and other locations, including the Morris County Household Hazardous Waste Facility, 973-829-8006, [www.MCMUA.com](http://www.MCMUA.com), at the Chatham Borough Recycling Depot, Summit Ave. and Ogden Street, from 9 am to Noon, on January 7, 14, 21 and June 2, 9, and 16, 2012. If 100 people plant trees, they collectively remove 5 tons of Co2, 400 lbs. of ozone, and 300 lbs. of small particulate matter. See [www.sustainablejersey.com](http://www.sustainablejersey.com); [www.cleanairgardening.com/plantingtrees.html](http://www.cleanairgardening.com/plantingtrees.html); [www.earthfriendlygardening.wordpress.com/2006/08/01/the-positive-environmental-impact-of-trees](http://www.earthfriendlygardening.wordpress.com/2006/08/01/the-positive-environmental-impact-of-trees).

**Buy Energy Star Appliances** – Energy Star appliances receive the federal EPA Energy Star designation after careful consideration. Among other criteria, an Energy Star appliance must produce significantly less greenhouse gas emissions and other pollutants without sacrificing product performance. Energy Star appliances must be widely available, and they must be priced so that consumers can recoup their investment through utility cost savings in a reasonable period of time. See [www.energystar.gov](http://www.energystar.gov).

The New Jersey Board of Public Utilities NJ Clean Energy Program provides financial incentives for some uses of Energy Star Appliances. [Home Performance with Energy Star](#) is a home energy audit program, which generates a report of a homeowner listing recommended energy efficiency measures and identifying related financial incentives. Beginning 1/1/12, incentives up to \$5,000 are available, plus 0% financing for any energy projects achieving total energy savings from 10% to over 25%. A [Clothes Washer Rebate](#) of \$50 is available on certain Energy Star clothes washers. [Warm Advantage](#) provides rebates and incentives for certain Energy Star hot water heaters, boilers and furnaces. See [www.njcleanenergy.com](http://www.njcleanenergy.com) or call 1-866-NJSMART.

**Install Energy-Efficiency Double-Paned Windows** – EnergyStar windows and skylights have advanced features like invisible glass coatings, vacuum-packed spaces, improved framing materials and weather stripping, which means they keep houses cooler in the summer and warmer in the winter than conventional windows and skylights. They block 70% or more of the solar heat gain in the summer and reflect radiant heat indoors during the winter. They have low-E coatings that can reduce fading of items like furniture, flooring, window treatments, etc., from direct sunlight by up to 75%. See [www.energystar.gov](http://www.energystar.gov).

**Put A Rain Garden In Our Yard** – a rain garden is a shallow depression in the ground that filters stormwater runoff from impermeable surfaces, such as a roof, street, or driveway. Rain gardens are easy to install and inexpensive to maintain. They are made of beautiful native plants which attract butterflies and beneficial insects.

Rain gardens filter pollution, such as motor oil, pesticides, and other pollutants out of stormwater, preventing these pollutants from reaching local storm sewers, streams and rivers. That's important, because the Passaic River provides drinking water for a lot of NJ towns, including Chatham Township. Rain gardens also recharge rainwater into the ground, which is important in Chatham Borough, where all of the drinking water comes from wells in the Buried Valley Aquifer.

See [www.sustainablejersey.com](http://www.sustainablejersey.com), also the Rain Garden website of the Rutgers Water Resources Program, [www.water.rutgers.edu/Rain\\_Gardens/RGWebsite/raingardens.html](http://www.water.rutgers.edu/Rain_Gardens/RGWebsite/raingardens.html). See also the Native Plant Society of NJ, including a manual for rain garden installation: [www.npsnj.org](http://www.npsnj.org).

**Plant and Maintain A Food Garden** – Grow vegetables and fruit in a home garden, or apply for space in the popular Chatham Community Garden. The freshest, cheapest and safest ingredients are available in a home garden. Home gardens save money, time and energy that would otherwise be spent driving to a store and shipping produce. Gardening involves exercise, which has many health benefits. See [www.sustainablejersey.com](http://www.sustainablejersey.com), [www.garden.org/foodguide/browse](http://www.garden.org/foodguide/browse), [www.extension.org/horticulture](http://www.extension.org/horticulture), [www.organicgardening.org](http://www.organicgardening.org), [www.njaes.rutgers/mastergardeners](http://www.njaes.rutgers/mastergardeners).

**Stop Using Bottled Water** – Americans purchase approximately 28 billion water bottles per year. Most end up in landfills. It has been estimated that Americans throw away over 2.5 million plastic water bottles per hour. Plastic can take 1,000 years to decompose. Plastic is made from nonrenewable fossil fuels, oil and natural gas, which emit greenhouse gases. According to the Earth Policy Institute, meeting the American demand for plastic water bottles requires over 1.5 million oil barrels annually, enough to fuel 100,000 cars per year.

**Install a Rain Barrel, Water Gardens with Rain Water** – rain barrels are available from many home goods and hardware stores and are inexpensive and easy to install. The rain barrels catch the water from a downspout or roof and keep the water until used on gardens, which can be especially helpful during droughts. Rainwater is better for plants because it does not have the chemicals needed in drinking water. Rain barrels save money on water and reduce stormwater runoff. The Soak It Don't Send It! program initiated by the Chatham Township Environmental Commission has placed rain barrels in many schools in the School District of the Chathams and at various locations in Morris County, including the Great Swamp Outdoor Education Center in Chatham Township. See [www.chathamtownship.org/ctec](http://www.chathamtownship.org/ctec).

**Use Organic Fertilizer on Yard** – too much nitrogen, or quick-release synthetic fertilizer, can weaken grass, alter pH, and promote disease, insects and thatch accumulation. The EPA estimates that only 35% of fertilizers ever reach the grass plant; the other 65% is volatilized into the air, seeps in the groundwater, or runs off with stormwater. Organic, slow-release fertilizer feeds the soil and grass, needs about 30% less water, and can lessen runoff into storm sewers and waterways. See: [www.beyondpesticides.org](http://www.beyondpesticides.org), [www.safelawns.org/lawn](http://www.safelawns.org/lawn), [www.nofani.org](http://www.nofani.org), [www.ifplantscouldtalk.rutgers.edu/factsheets/?category=6](http://www.ifplantscouldtalk.rutgers.edu/factsheets/?category=6), [www.chathamtownship.org/healthy\\_lawns.html](http://www.chathamtownship.org/healthy_lawns.html).

**Install “Smart” Irrigation Fixtures** – The USEPA estimates that Americans use over 7 billion gallons of water outdoors daily, mostly for landscape irrigation. Up to 50% of that amount is due to overwatering due to inefficient landscape irrigation methods and technologies. WaterSense is the EPA label for water that is similar to Energy Star for energy. “Smart” WaterSense controllers adapt the amount and frequency of watering at a site to the plants, weather conditions, and soil moisture at that site. These drip and micro-spray controllers use 30-50% less water than traditional irrigation by avoiding overwatering. The WaterSense website, [www.epa.gov/WaterSense/](http://www.epa.gov/WaterSense/) includes a list of landscapers, including some in the local area, who are certified in correct installation of WaterSense controllers and fixtures. See also [www.njwatersavers.org](http://www.njwatersavers.org),

**Use Non-Phosphate Detergents** – phosphates improve the cleaning efficiency of soaps and detergents because they remove dirt and cut back on soap scum. They are plant nutrients, but high phosphate levels permit algae to grow faster than normal in a lake, stream or river, causing them to turn green or cloudy. Over the long term, these bodies of fresh water can fill in with dead algae and other organic matter, turning into dry land.

**Install Faucet Aerators, Low-Flow Showerheads** – Faucet aerators and low-flow showerheads are small, easily installed, inexpensive gadgets that are widely available in hardware stores. They conserve water by decreasing the amount of water that flows from a faucet or showerhead. Because aerators restrict water flow, they also make the flow more forceful, so the additional water is not missed. Federal regulations mandate that new showerhead flow rates cannot exceed 2.5 gallons per minute. Typical showerheads have flow rates of 5.5 or higher. See [www.njwatersavers.org](http://www.njwatersavers.org); [www.epa.gov/WaterSense/](http://www.epa.gov/WaterSense/) .

### GREENEST LEVEL

**Drive a Hybrid Or Electric Car** – It is estimated that motor vehicles create 20 to 40% of greenhouse gas emissions in the US. Transportation now creates more carbon emissions than industrial activity.

A hybrid electric vehicle obtains driving power from both an internal combustion engine and a battery-powered electric motor. Hybrid vehicles can achieve twice the fuel economy of conventional vehicles while reducing greenhouse gas emissions 30 to 50%.

Electric vehicles emit no tailpipe pollutants. They reduce carbon monoxide emissions by 96% and overall greenhouse gas emissions by 74%. See [www.sustainablejersey.com](http://www.sustainablejersey.com).

**Install Solar Panels on House or Business** – Solar power is a 100% clean and renewable energy source. It has been estimated that a solar-electric system for a conventional home costs approximately \$40,000 and requires about 6 months to order panels and obtain permits. Before proceeding with a solar project, homeowners should register it to gain eligibility to receive Solar Renewable Energy Certificates. Every time the house generates 1,000 kWh of electricity – houses can generate this much energy – a SREC is placed in the homeowner’s account. SRECs can be sold on the SREC tracking system, generating revenue. See [www.sustainablejersey.com](http://www.sustainablejersey.com) and [www.njcleanenergy.com](http://www.njcleanenergy.com).